



UNIDYNE



THE SHURE 55 SERIES MICROPHONES:
Setting the Standard of Performance

STORY



SHURE®

At any given moment, people in all corners of the globe are relying upon Shure products to communicate, entertain, and educate. If you have an active interest in any sector of the audio world, chances are you know and trust the Shure name.

Our founder, S.N. Shure, developed our company around a set of ethical business principles. The fact that Shure Brothers has entered its eighth decade of continuous operation is a testament to the soundness of these principles. Though we mourn his passing, Mr. Shure's values and philosophy remain with us, and are reflected in the products and service we provide to our valued customers.

Our associates are trained and truly believe in Total Quality manufacturing techniques. Our aim is to design and produce the best products available for the markets we serve, and to provide the very best in service worldwide.

Today, we offer a variety of audio products ranging from wired and wireless microphone systems to mixers and accessories. Our components perform in touring sound, broadcast, installed sound, and studio recording applications to name but a few.

Throughout a good part of our history, one series of products has remained in our catalog longer than any others. Widely recognized the world over, they have come to be synonymous with the name Shure. These products are the 55 Series of microphones.

In presenting this rich and fascinating history of the 55 Series,

Shure would like to offer a sincere note of thanks to all of you who have faithfully stood with us over the years. Our commitment to providing you with quality performing products remains the same now as when the first 55 Series Unidyne made its debut in 1939.



UNIDYNE THE ENDURING BENCHMARK STORY

Outwardly sleek in design with a futuristic look well-suited for a 1930s science fiction movie, the 55



Admiral Chester W. Nimitz

Series microphones from Shure have come to symbolize what many think of when someone says the word microphone. Following its debut in Shure's 1939 catalog (#152), the 55 Series embarked upon a path spanning seven decades which brought it to a point of professional and public recognition today rarely attained by any product, let alone a group of audio components.

The visibility of the 55 Series and the permanent marks it etched on the world's collective psyche are not the result of happenstance either. Nor are they the careful craftings of some slick advertising campaign. The 55 Series' benchmark status was earned through its reputation as a tireless workhorse and dependable performer, and achieved by its unprecedented audio quality and reliability.

Shortly after their introduction, the 55 Series microphones quickly became a mainstay in the world of audio professionals. Their reputation soon spread among microphone users as well. Celebrities, entertainers, and politicians came to rely upon them. They survived war-time service, and were familiar fixtures at critical, well-known moments in history. Scores of photographs, films, and videotapes show them in the company of kings, queens, presidents, and generals. They stood in front of Frank Sinatra and Doris Day during the Big Band era. Elvis embraced them too (both in person and on a 29-cent stamp issued in 1994 by the United States Postal Service), as have countless other rock stars past and present. Today, some 56 years after their first appearance, 55 Series microphones are as popular and sought after as ever. And while the microphones have been subjected to

internal changes over the years to keep them technologically up-to-date, like an ageless beauty, they still retain the same external appearance of their youth.



Buddy Guy

UNIDYNE HISTORICAL ORIGIN STORY



Famed Shure Unidyne

Back in 1939, the original Unidyne® became the first 55 Series offering. In order to satisfy as many microphone applications as possible, it was sold in three distinct configurations, each of which had a different impedance. The first, model 55A, utilized a low-impedance design for operation in 35-50 ohm systems. Model 55B was for 200-250 ohm systems, while the model 55C was built expressly for use with high-impedance equipment. List price for the 55A was \$42.50 (U.S.), while models 55B and 55C cost \$45. Catalog copy exclaimed that the microphone incorporated the “very latest in dynamic microphone design.” It was, after all, “the first high-quality, low-cost moving-coil type dynamic [microphone] with true cardioid unidirectional characteristics.” The Unidyne was built to address problems created by feedback, background noise, and reverberation.

Sales literature additionally touted the advantages of cardioid-type true unidirectional microphones, which “give wide angle coverage with excellent high-quality

response at the front, yet are dead at the rear.” Verbiage of the time went on to emphasize the ability of the microphone to “pick up and reproduce the sound you want as you want it—to discriminate from unwanted sounds, free from feedback, audience and background noise, room reflection and reverberation.” The advantages of the unidirectional microphone embodied in the original Unidyne remain today as the solution of choice in many difficult sound pickup and reinforcement situations.

Utilizing Shure’s proprietary “uniphase” technology, the Unidyne was marketed for PA, recording, and broadcast applications. The streamlined chrome head could be tilted up to 90 degrees. A built-in cable connector was supplied, as were a special locking microphone plug attached to the cable, and threads for stand mounting.

Shure engineer Benjamin Baumzweiger is credited with being the driving force behind the creation of the first Unidyne. Baumzweiger (who later changed his name to Bauer), began developing the microphone in early 1937. In undertaking the project,



Dinah Shore

his primary objective was to create a unidirectional microphone which used a single dynamic element. Prior to the Unidyne, the most common way of creating a microphone with unidirectional response was to use an omnidirectional (non-directional) element combined with a bidirectional (“figure-eight” pickup pattern) element in a single housing. If the outputs from both cartridges were mixed together electrically in equal proportions, the results would yield a cardioid pattern. In fact, you could obtain supercardioid, hypercardioid, omnidirectional, or bidirectional patterns simply by controlling the relative balance of the two cartridges with a multi-position switch or pan-pot.

Unfortunately, these early dual-element “unidirectional” microphones had many drawbacks.

First and foremost, their size tended to be large and bulky. Performance was lacking as well. Since the omnidirectional and bidirectional elements didn’t possess the same frequency responses, and they were in different locations in the housing, their resulting combined frequency response and polar pattern was irregular and difficult to control. Overall, the concept was far from perfect, but better than nothing if you were facing serious feedback or noise problems.

Ben Bauer realized that the best way to deal with

these difficulties was to use just one element. He began by examining the physics at work. He knew that if a single element was only exposed to sound on its front side, you’d obtain an omnidirectional response. Conversely, a bidirectional microphone has both sides—the front and back—exposed to sound. With that in mind, Bauer knew that if he could partially block the backside of a microphone element, in theory he would achieve a response somewhere between omnidirectional and bidirectional which would be heart-shaped, or cardioid. He set about to create this hypothetical



The Unidyne is part of a Shure microphone tradition.

cartridge, and wound up with what Shure would later name the Unidyne.

When complete, Bauer’s Unidyne design was configured so that the microphone had a series of front and rear openings which

allow sound waves to reach both sides of the element’s diaphragm. The sound waves reaching the diaphragm from the rear had a longer path and passed through openings which produced a time delay between the sound entering from the rear and sound waves striking the front of the diaphragm. By varying the amounts of acoustical resistance encountered at the rear openings, Bauer was able to achieve cardioid, supercardioid, or hypercardioid patterns using a single element, and the first true unidirectional dynamic microphone became reality.



THE MICROPHONE THAT NEEDS NO NAME



Red Skelton

An instant success once it hit the marketplace, the original Unidyne was the best sounding mic available, and set a new standard of high quality audio pickup combined with discrimination against unwanted sounds. True to Bauer's design theories, the directional response was more predictable and better behaved than its predecessors, so it offered a tremendous new ability to control feedback and reduce ambient noise pickup. In addition, its size was small compared to competitive offerings, thereby making it popular with singers, entertainers, and public speakers.

During the years between 1939 and 1946, the Unidyne remained largely the same. Changes to the line were insignificant for the most part during these war years, with the most noticeable ones centering around new model numbers. Variations to the original design included the 1940 introduction of a separate broadcast version (model 555), which had an improved isolation mount. An external call letter plate and a shroud could be purchased separately as accessories to this unit.

By 1947, the broadcast version had become model 556, and the three separate models designed for use with different impedances were replaced with one single model (model 55) which was equipped with its own multi-impedance selector switch located under the case at the rear. Changes were in the offing at the end of the decade, however, as Ben Bauer prepared to deliver yet another breakthrough.

"In 1950 we developed a print ad which dramatically illustrated the dominance within the industry the Unidyne held around the globe," Shure communications consultant Howie Harwood recalls. "It was titled 'Used the World Over More Than Any Other Microphone' at the top. The subhead read simply 'The Microphone That Needs No Name'. Underneath the headings we ran a large photo of the Unidyne. The name or model of the microphone didn't appear anywhere. The ad ran in all of the trade publications. One of the reasons we created it was to demonstrate how familiar the Unidyne had



Groucho Marx and Betty Hutton

become. By that time, it was a microphone which needed no name or introduction. It was recognized everywhere.”

At about the same time the print ad first appeared, Ben Bauer finalized all of the elements required to put the next generation of Unidynes into production. First unveiled in 1951, the new “Small Unidyne” microphones (featuring the Unidyne II cartridge) improved upon all the features which made the original

Unidyne such a success. As their name implies, the Small Unidynes were lighter in weight and more compact than the originals. Compared to their predecessors (which were still

offered as “Standard Unidynes” in ‘51), the Small Unidynes were only about two-thirds the size, and were available in two model configurations—Model 556 (for broadcast) and Model 55S (for general purpose). Internally, the new cartridge improved performance across the board with the addition of improved magnet materials, diaphragm suspension, and cartridge isolation. Random noise energy pickup was reduced even further, while frequency response was improved as well. Like the Standard Unidynes, the Small Unidynes were also equipped with a multi-impedance selector switch.



Indira Gandhi

The new cartridge brought more Unidyne success to Shure, and carried the marque until 1988, when it was replaced by a modern cartridge similar to the one used in the Shure SM48 hand-held musical and performance microphone. Just as in the time between the introduction of the original Unidyne and the advent of the Unidyne II cartridge, the period between ‘51 and ‘88 saw little change in product configuration.

Today, the microphone is almost outwardly identical to the 1951 version. Other than a modification made to each model’s base in 1962, and the elimination of the multi-impedance selector switch in the late ‘70s, the

only other visible changes made were to the material lining the housing, which started out as reddish-brown silk in the earliest models, was changed to blue, then black, and finally to black foam.

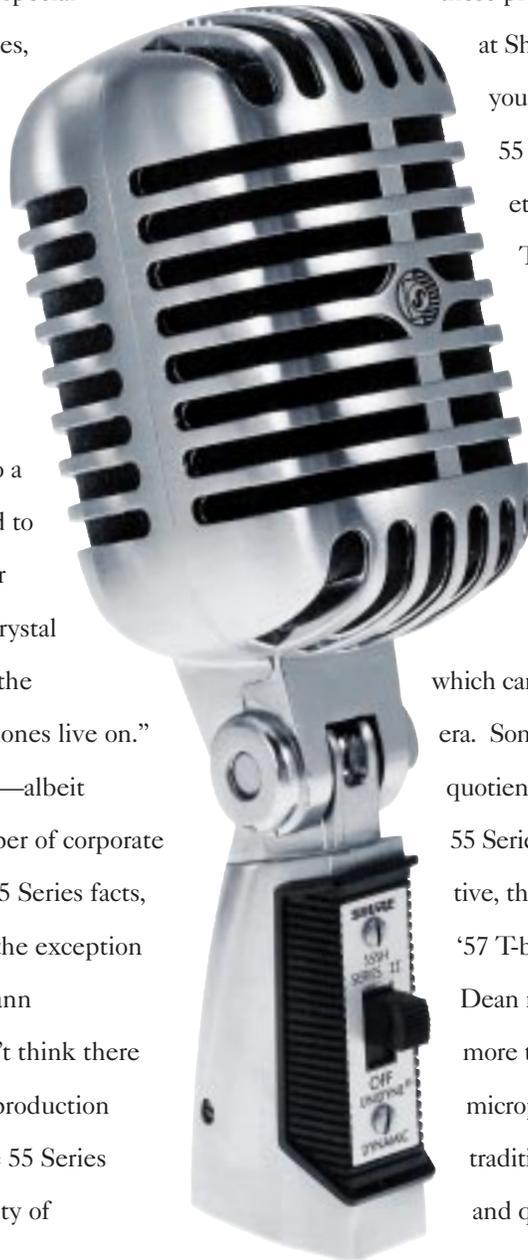
Shure’s current catalog shows the 55SH Series II, which houses the SM48-style cartridge. As reliable as all of its forebears, the microphone’s cardioid/dynamic design has even better frequency response and directional characteristics. It continues the benchmark tradition of performance and dependability established with the original Unidyne.

UNIDYNE THE STATUS OF AN ICON STORY

For anyone who has read this far, a twofold question logically arises: What's so special about the 55 Series microphones, and why do they remain so popular? "Part of the answer lies in the fact that they have become cultural icons," answers Shure applications engineer Tim Vear. "Technically speaking, they also had the luck of falling into a design category which proved to be the one which won out over everything else. Carbon and crystal microphones gradually fell by the wayside, but dynamic microphones live on."

One of Shure's prominent—albeit unofficial—historians and keeper of corporate folklore, Vear is an expert on 55 Series facts, philosophy, and trivia. "With the exception of some reissues of old Neumann condenser microphones, I don't think there are any other microphones in production today that go back as far as the 55 Series models," he states. "The reality of

having been around for generations has helped make these products an icon, both internally here at Shure and to the rest of the world. If you look around our offices, you'll find 55 Series pins, engravings, posters, etched paperweights, and bookends. The image has even served as a watermark on invoices. When people within our industry see a 55 Series microphone, they can't help but think of Shure. Conversely, when someone outside of the industry sees one, it serves as a visual cue which can help transport them to a different era. Something I refer to as a 'coolness quotient' also adds to the icon status of the 55 Series. Viewed from a design perspective, they exude all of the coolness of a '57 T-bird, Stratocaster guitar, or a James Dean movie. They are, however, much more than a symbol. They are real microphones which adhere to the Shure tradition of excellence in performance and quality."



55SH Series II

INTO THE FUTURE

If the performance of the 55 Series from the original Unidyne to the model 55SH Series II available today is any indication, the line is in good shape to face the audio challenges of the millennium. The future will most likely find 55 Series microphones still serving a variety of sound reinforcement needs, and being used in films and on TV to add realism to scenes depicting events from the past. Will they still be cool too, in 2002? Of course. Just look into the polished luster of the ribbed housing. The answer is right there.

UNIDYNE
HIGHLIGHTS IN UNIDYNE HISTORY
STORY

By virtue of its status, the 55 Series has led an exciting life. It helped to define different eras, and enjoyed front row seating at noteworthy events of all description. Some highlights from its illustrious history include:

The day crooner Rudy Vallee scrapped his quaint, but old-world megaphone and switched to a Unidyne, he became the first prominent entertainer to adopt the technology for live performances.

General Douglas MacArthur used Shure Unidynes on the deck of the U.S.S. Missouri during ceremonies which ended the war with Japan in 1945.

You don't have to look closely to see the Unidyne in the famous photo of President Harry S. Truman holding up the erroneous newspaper headline reading "Dewey Defeats Truman".

JFK was frequently photographed making speeches with a stylish chrome-plated microphone stand-mounted in front of him.

Photos of Eva Peron delivering speeches clearly demonstrate her microphone of choice. True to history, the Unidyne also made it into "Evita", the Broadway hit musical based on her life.



Rudy Vallee



General Douglas MacArthur



Harry S. Truman



President John F. Kennedy

The film “Good Morning Vietnam”, starring Robin Williams, made the Unidyne its virtual co-star. The microphone was also seen in print ads and posters for the film across the US.

In 1994, the U.S. Postal Service issued six stamps which prominently featured the Unidyne. One of them was the 29-cent Elvis stamp.



Tony Bennett

The list of major entertainers who used or are still using Unidynes would probably fill two thick volumes. Just a smattering of name-dropping from the complete list includes Marlene Dietrich, Dean Martin, Jerry Lewis, Tony Bennett, Red Skelton, Axl Rose, Buddy Guy, and Tom Petty.



SHURE®

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